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**Timber Sale Decision Study
Pacific Southwest Region**

REPORT AND ACTION PLAN



U.S. Department of Agriculture
Forest Service

San Francisco

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The Study Team

Richard Johnson is a forester on the Timber Management Staff in the Regional Office. He served as team leader for this study.

Keith Crummer is the District Ranger on the Corning Ranger District, Mendocino National Forest.

Jim Reeves is the Forest Engineer on the Tahoe National Forest. At the time of the study he was an engineer on the Engineering Staff in the Regional Office.

Dale Trail is the Appeals and Litigations Program Manager on the Land Management Planning Staff in the Regional Office. At the time of the study he was a program analyst on the Administrative Management Staff in the Regional Office.



United States
Department of
Agriculture

Forest
Service

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Reply to: 2430 Commercial Timber Sales

Date: DEC 31 1984

Subject: Timber Sale Decision Study

To: Forest Supervisors and Staff Directors

Enclosed is the Timber Sale Decision Study Report and approved Action Plan to implement the study teams recommendations.

The eight desired conditions identified by the study team depict goals needing a fresh approach for focus, rather than entirely new concepts. With these recommendations we have the opportunity to take actions which should result in significantly increased quality level outputs from our timber sale preparation efforts while providing additional efficiency to our timber management program.

The Action Plan outlines work to be done, by whom and by when. You are accountable to implement the actions.

Zane G. Smith, Jr.
for ZANE G., SMITH, JR.
Regional Forester

Enclosure

Ranger Distribution



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1. Line Officer Involvement

Desired Condition: Increase Line Officer involvement during project planning phases.

Situation: Field examination showed that in some cases line officer involvement appeared to be weak at the beginning but increased as the project moved through the planning and implementation phases. Consequently, prioritization of the environmental factors was not always clear. This led to avoidance of areas where conflicts occur. Interdisciplinary (ID) team specialists' reports often did not focus on the project objectives but were centered around separate resource objectives. Line direction was not provided to focus the ID team toward a common, uniformly understood objective.

Line officers should be involved from the beginning of the project analysis in setting project standards, developing the ID team and giving them their "marching orders". The line officer should continue involvement throughout the timber sale planning process, especially on those projects that involve a high degree of complexity, controversy or magnitude to insure continuity and that changes in direction due to new information are produced and documented.

RECOMMENDED ACTION

1. Action: Include "Line Officer Involvement Schedule" (see appendix B) in the R-5 Timber Sale Preparation Handbook - FSH 2409.24.

Who: RO - Timber Management
When: March 31, 1985
Cost: Minimal

2. Action: Incorporate "Line Officer Involvement Schedule" into all Region 5 District Ranger performance standards by reference to R-5 Timber Sale Preparation Handbook - FSH 2409.24.

Who: Forest Supervisors
When: FY 1985 Performance Period
Cost: Minimal

2. Written Direction

Desired Condition: Decisions which are to be carried out by others should be made in writing, clearly describing the expected results and factors considered (opportunities & constraints) and be signed by a person with delegated authority.

Situation: Written decisions are frequently either scattered throughout a number of documents or absent all together. Some documents were signed by persons without delegated authority and decisions were written without describing expected results or the factors which were considered. Some directions came late in the process or out of sequence before the decision was signed, after the contract was let or after harvest (for example, final road decision before the environmental assessment; sale preparation officer deletion of units after decision signed). Among the main problems are the following: 1. Original decisions don't clearly describe the desired end result; 2. Employees, especially inexperienced specialists, take broad, programmatic decisions as "gospel" to be implemented regardless of the specific situation and feel obligated not to question decisions from above, even though there is good reason to do so; 3. Some personnel are ill-prepared to write and implement decisions; 4. Decision makers assume that implied data will be clear to others.

Poorly written direction causes confusion for those who need to implement the direction. This leads to doing work that does not contribute to the desired end result or having to redo work and make changes in ongoing activities in order to get back into line with the original intent of the decision.

RECOMMENDED ACTION:

1. Action: Include a sample outline of a timber sale decision document in the Timber Sale Preparation Handbook.

Who: RO - Timber Management
When: March 31, 1985
Cost: Minimal

2. Action: Include a list of documents the Line Officer as delegated must sign in the above mentioned "Line Officer Involvement Schedule".

Who: RO - Timber Management
When: March 31, 1985
Cost: Minimal

3. Roles in Project Level Decisions

Desired Condition: Increase the interdisciplinary involvement of those ultimately responsible for implementation and monitoring of District programs.

Situation: Where the District Ranger made decisions affecting a timber project with the primary staff acting as an interdisciplinary team, role identification was clear and implementation of the decision was better directed and coordinated. Without this level of staff participation, decisions were often polarized and lacked coordination. Where the District Ranger and primary staff make up the interdisciplinary team, accountability for project execution is linked with accountability for decision making. Specialists and substaff participants can then fulfill their primary responsibilities to provide accurate information, predict impacts and implement operational plans without the complication of interdisciplinary team role playing.

The Line Officer and designated primary staff should be included on the team for all timber sale plan decisions on the District. The team should include those ultimately responsible for implementation and monitoring. The Line Officer should be directly involved in the development and analysis of alternatives and selection of the sale plan. Their participation should be indicated in their performance standards.

RECOMMENDED ACTION:

1. Action: Incorporate responsible Line Officer participation points in the "Line Officer Involvement Schedule".

Who: RO - Timber Management
When: March 31, 1985
Cost: Minimal

2. Action: Conduct Regional timber sale planning process (TSPP) training specifically designed for Line Officers and key principal staff.

Who: RO - Timber Management
When: June 1, 1985
Cost: \$13,500

3. Action: Incorporate into the management development program for Line Officers, training in the skills they will need to meet their responsibilities in TSPP.

Who: RO - Timber Management, Personnel Management
When: FY 86
Cost: Minimal

4. Professional Skills

Desired Condition: Increase understanding of the roles of resource professionals in project planning.

Situation: The ability to fit broad, general direction to specific situations is a major factor in TSPP decisions. In nearly half of the decisions reviewed, the needed general-to-specific judgement was not properly made. The most common shortcoming observed was a combination of inadequate interpretation and inappropriate broad application of general decisions and policies. Professional skills must be applied to find the best solution to problems. Changes required to meet reduced funding, purchaser credit reductions or shifts from arterial-collector to low-standard local roads have forced managers to be less tolerant of ineffective and costly proposals. The need for sound professional judgement actually increased in response to these changes. However many professionals still feel they may be violating professional ideals and good practice by complying with current management constraints.

Professional and technical skills were generally applied appropriately to situations where there was an identified or very likely need. There appeared to be an adequate cadre of certified or qualified timber personnel on each subunit (sale administrators, silviculturists, logging system engineers and so forth) to meet project needs. Journeymen professionals tend to evaluate policy and mold it to fit specific situations. They also approach challenges, figuring out how to meet them rather than why to not meet them. They are less apt to "buffer" their recommendations with excessive safety factors and are better able to evaluate risk. Finally, they recognize and productively respond to change, whether from funding, field situations, changed workloads or other sources.

RECOMMENDED ACTION

1. Action: Develop "role and purpose statements" for key players in the Forest Service project planning process.

Who: RO - Deputy Regional Forester-Resources (Resource Staffs)

When: October 1, 1985

Cost: Minimal

2. Action: Incorporate "role and purpose statements" for key players in project planning into level 1 and 2 orientation guides and into recruitment activities (for example, materials for High School and College counselors).

Who: RO - Personnel Management

When: April 1, 1986

Cost: Printing and distribution \$9,000

3. Action: Publish journeyman performance indicators for project level activities.

Who: RO - Deputy Regional Forester-Resources
When: October 1, 1985
Cost: Minimal

5. Response to Specific Situations

Desired Condition: Minimize the need for later project changes due to the lack of site-specific information at the time decisions are made.

Situation: The study found several instances where decisions agreed to and approved by Forest Supervisors were later revised or changed as site-specific information became available. These decisions fit into two categories: 1. Decisions that simply restate Forest policy without field evaluation. 2. Decisions based on only a cursory field evaluation.

The credibility of the timber sale decision was lessened with each change or modification. Managerial control was lost in the early stages of project development and had to be recouped later in the project. Time and dollars invested in the early decision analysis effort were generally lost in these cases. The main reasons for these deficiencies are: 1. Cutback in front end work on the project because of limited manpower and dollars. 2. Inexperienced personnel involved in preliminary work relying on Forest standards in lieu of "on-the-ground" problem solving skills. 3. Lack of accountability for complete staff work during the information input stage. 4. Decisions made by default (pen and ink alone.) 5. Lack of understanding of the proper level of specificity required.

RECOMMENDED ACTION:

1. Action: Develop and publish a policy statement that defines desired experience for journeyman level participants in project planning.

Who: RO - Timber Management, Personnel Management
When: October 1, 1985
Cost: Minimal

2. Action: Develop performance standards which will insure preparation of implementable project plans based on completed staff work that does not require changes after review because of overlooked predictable on-the-ground conditions.

Who: District Rangers/Forest Supervisors
When: Begin FY 1986
Cost: Minimal

3. Action: Institute an employee development program for project planners that assures on site journeyman participation in decision making.

Who: RO - Personnel Management, Resource Staffs
When: May 1, 1985
Cost: \$20,000

4. Action: Use a performance standard that measures onsite journeyman participation; for example, 70-80% of the field season is spent doing on site problem solving.

Who: Line Officers, Staff Officers

When: March 31, 1985

Cost: Minimal

5. Action: Include in the FONSI declaration those mitigating measures identified as essential to the finding and insure that these measures are funded as a project cost.

Who: Line Officers

When: Immediately

Cost: Minimal

6. Area Planning

Desired Condition: Provide clear direction for handling resource use conflicts in order to minimize the tendency to avoid "problem" areas.

Situation: Even though area planning is being done, "problem" areas are being avoided because of lack of line direction concerning the handling of resource conflicts. Conflict areas are often avoided or dedicated to non-use even though the programmed harvest is based on their availability. This compounds the problem for those who follow. The consequences of this compounding are not being adequately considered. Line Officers have avoided prioritizing environmental factors. Thus all factors have weighed the same in the minds of their staff. When conflict appears the area is avoided. Many times the line officers have avoided prioritizing the environmental factors because one or more appear to have been declared "sacred" by law (archaeology) or policy (spotted owls) and the specific protection requirements are not made clear to others (typically Streamside Management Zones and geologically unstable areas).

Decisions should be made in proper sequence: programatic to area-of-influence (compartment, watershed and so forth) to project-area to activity-unit to within-the-unit. In determining the location and layout of a timber sale, the compartments on a district should be stratified by priority for entry. The highest priority compartment should then be analyzed based on existing information, with a minimum of field checking to produce a proper development plan. This plan should include locations of potential development constraints, timber stand classification and prioritization with silvicultural objectives proposed. An integrated transportation plan, including logging and road system, should be included with options displayed where more than one way is identified to obtain the desired results within the economic constraints established by the line officer. The transportation plan should be broad enough to account for access to all areas tributary to each timber sale road.

The sequence of development within the compartment should be prioritized with the help of the appointed ID team and recommended next entry presented to the line officer in the position statement. This position statement will then become a basis for the compartment area development plan. Not until a sale plan within the area is finalized should specific unit analysis be completed or layout begun.

Most Districts sampled had an area planning process functioning but the handling of constraints was often delayed for future projects in the sale area. Examples of this are in Spotted Owl Management Areas (SOMA) which will not be firmed up until the Land Management Plans are produced and in Streamside Management Zone (SMZ) prescriptions which seem to be going through an evolutionary process. The Districts have in many cases simply backed away from issues of this nature by leaving unofficially dedicated lands in a non-use category until the issues could be resolved. Examples are: 1. Some streamside zones have become economically isolated but contain valuable conifers which are not needed to meet the stated management objectives for the SMZ. 2. The stands between treatment areas have been left to satisfy unspecified spotted owl needs rather than a specific SOMA being identified and planned for. 3. Rather than doing inventory and mitigation work, archeological area boundaries have been idealized and pass over.

RECOMMENDED ACTION:

1. Action: Plan and implement projects on suitable/available lands as prescribed by the Forest plans as they are approved. This would include mitigating local issues so that the Forest plan can be implemented through project planning.

Who: Line Officers

When: As Forest plan is approved

Cost: Minimal

7. Development of Facilities Appropriate to Management Needs

Desired Condition: Maximize the building of timber sale roads to appropriate standards.

Situation: Current transportation policy calls for identification of facility design criteria based upon Forest planning and management documents; for example, land management plans, environmental plans, land ownership status records, transportation study reports and so forth. Once design criteria have been extracted, appropriate road design elements and standards can be determined that will direct the design, construction and operation of the facility. Planning must define early that a facility is needed, who needs to use it, and what constraints, if any, it must meet. The intent is to provide cost effective facilities more consistent with the shift of access needs from high standard arterial and collector roads to short, low standard, local roads. The most frequently observed problems (and inappropriate decisions) were roads designed to excessively high standards and incorrect use of temporary roads.

There is still a tendency to overbuild roads. Specified roads generally do not fully meet the concepts of low-standard-road designs for the following reasons:

1. It is difficult for managers to resolve differing expectations of all people involved in the entire process. This was seen as a problem in interdisciplinary selection of design criteria and in technical development from the design criteria.
2. Engineers are sometimes unaware of or reluctant to accept what constitutes a low standard road.
3. Managers, designers and contract assemblers frequently do not realize the construction flexibility available through careful selection and adaptation of contract specifications.
4. Managers are reluctant to "force" development of a facility that fits only the determined needs. It is often perceived to be easier or more productive to use their limited time to deal with opportunities most directly under their control. Hence silviculture, recreation and so forth, draw more attention than accountability for road standards.

The second significant problem was the improper designation of a road as temporary. Several reasons for deciding on a temporary road were observed.

1. There is a definite association of temporary roads with the lowest standard facility attainable. Many managers feel that if they want a minimum standard road it will have to be built as a temporary road. Policy is that selection of standard and determination to build temporary or specified are independent, unrelated decisions.

2. The cost of specified roads is perceived to be "automatically" higher because of the engineering (survey, design and so forth) costs. When policy is followed and standards are selected independently, the engineering costs should be the same for both temporary and specified roads.

3. Purchaser credit can be reduced by building a road as temporary rather than specifying it in the contract. This is only appropriate when the facility is not needed for post-sale use.

4. Construction as a temporary road allows the Sale Administrator greater flexibility to fit the facility to the equipment requirements of the purchaser. The designer must assume a design vehicle common to the area. In the case of logging equipment, those vehicles are also often the critical vehicles. Where planned equipment is not common in the area, Sale Administrators wish to retain as much flexibility as they can to fit whatever equipment is actually used.

5. Roads built as temporary are not effected by turned back contracts. The requirements for public works contracting are perceived to adversely increase the standards of local roads.

RECOMMENDED ACTION:

1. Action: Develop a package for training Line Officers and support personnel in the use and capabilities of Chapter 4 of FSH 7709.56 (6/84).

Who: RO - Engineering, Timber Management
When: April 1, 1985
Cost: \$20,000

2. Action: Develop a method to minimize the adverse effects of turnback/public works contracting on achieving "Service Level D" road standards.

Who: RO - Engineering, Timber Management
When: April 1, 1985
Cost: Minimal

3. Action: Include written rationale for deviations from the base line "Service Level D" requirements in the sale plan decision.

Who: Forest Supervisors

When: Immediately

Cost: Minimal

4. Action: Include plans-in-hand and post construction reviews of one sale per year in the "Line Officer Involvement Schedule".

Who: RO - Timber Management, Forest Supervisors

When: FY 1985 Performance Period

Cost: Minimal

5. Coordinate this action plan with the "National Assessment of the Roads Planning and Design Process" action plan.

Who: RO - Engineering, Timber Management

When: Immediately

Cost: Minimal

8. Post Project Evaluation

Desired Condition: Increase awareness of the importance of evaluating the results of a project against those expected in the decision to undertake the project.

Situation: Many decisions are made without the benefit of analysis of past project evaluations. A project is not really complete until a post project evaluation is made and the data are stored for future use. These evaluations should include corrective measures and implementation plans and determination of the quality of performance in meeting objectives and if the objectives were appropriate.

RECOMMENDED ACTION:

1. Action: Add post project evaluation to decision standards.

Who: Line Officers
When: Immediately
Cost: Minimal

Appendix A
TIMBER SALE DECISION STUDY
DECISION STANDARDS

Timber Sale Time Line

Yr.	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	1/
	CE		PS		SP		TSR	SELL			SA					SAI

Decisions can only be evaluated against some standard, written or unwritten. In order to develop decision standards, the team prepared a list of specific concerns about the decision process itself. Aggregated concerns were identified and a desired process or "standard" was developed for each.

Those aggregated concerns and standards are set forth below.

CONCERNS AND STANDARDS.

Although numbered, these concerns are not listed in any priority order. The intention is that all of the standards are interrelated and interactive. They should be looked at in this light.

Concern 1. Decisions are made by individuals at the wrong organizational level or in a non-delegated position.

Standard. Decisions should be made by individuals who have delegated authority and can be held directly accountable.

Discussion. This concern may be the most critical relative to the expressed general concern regarding who's making timber sale decisions. For example, the Forest Supervisor may sign a decision notice as the decision maker without ever being intimately involved in the decision process itself. The real decision making went on at a much lower level in the organization. This process can lead to lower quality of work because in actuality, the real decision maker develops an attitude that other people in the organization will catch their mistakes and they will not be held directly accountable for them. There can be a lack of perspective needed to make the decision in the appropriate context; for example the GS-7 staffer does not have the same broad grasp of the situation as the District Ranger (who has the delegated authority).

Just as pervasive, is the downward filtering of the accountability process. It is extremely difficult for a Forest Supervisor to hold a GS-7 Sale Prep Forester directly accountable for a decision that resulted in excessive resource damage (or possibly an appeal, claim or lawsuit) on a timber sale.

1/ CE - Compartment Exam, PS - Position Statement, SP - Sale Plan, TSR - Timber Sale Report, SA - Sale Administration, SAI - Sale Area Improvement.

Concern 2. Decisions are not made in the proper sequence.

Standard. Decisions should be made in proper sequence.

- a. Programmatic to:
Area of influence (compartment, watershed and so forth) to:
Project area to:
Activity unit to:
Within the unit.
- b. From the general to the specific.
- c. From what and where to how.

Discussion. Many times decisions are not made or are made "after the fact", so to speak. Failure to make decisions in the proper sequence often leads to subsequent decisions that are incorrect or inadequate when evaluated in the context of surrounding resource needs; for example, temporary road access to cutting units without considering access past those units. Other decisions are forced to an inappropriate time in the hierarchy of decision making; for example, a person locating cut unit boundaries on-the-ground for a timber sale is forced to make a decision that should have been made during compartment planning or as part of the Forest Land Management Plan.

Concern 3. Decisions lack prioritization of influencing factors.

Standard. The relative importance of influencing factors (environmental, social, financial, organizational and so forth) should be recognized before decisions are made.

Discussion. Some decisions have swung one way or another because of inappropriate weight being given to a particular influence or issue.

Concern 4. Decisions lack consideration of more than one alternative.

Standard. Decisions should be preceded by an analysis which includes consideration of all objectives.

Discussion. There should be definitive differences between alternatives, each of which considers all the objectives of the project.

There is also the problem that one important factor can appear to be in conflict with other important factors at the same level, thus requiring close examination and thought.

Concern 5. Decisions lack consequence consideration.

Standard. Consequences of a decision should be considered before making the decision (severity, probability and so forth)

Discussion. There should always be a conscious effort to consider and predict the consequences of our decisions. Neglect of this principle almost always results in problems.

Concern 6. Decisions are not carried out through the life of a timber sale project.

Standard. Decisions made should be carried out throughout the life of the project unless new information necessitates different results (new objectives/standards/criteria and so forth) as directed by line officers.

Discussion. Decisions can only be made with the best information available at that time. At times changes are needed. Change should be infrequent, based on clearly defined expected results and should only occur when the line officer concurs with the change.

Concern 7. Changes in direction without considering the original influencing factors.

Standard. Every change likely to bring about different results should reflect consideration of influencing factors recognized in the original decision as well as new factors.

Discussion. Many times changes are made because someone changed jobs and the new person is operating with a different set of values. A conscious effort should be made to examine the influencing factors on the original decision.

Concern 8. Many decisions are not followed by written direction.

Standard. Decisions which are to be carried out by others should be made in writing, clearly describing the expected results and factors considered (opportunities and constraints) and be signed by a person with delegated authority.

Discussion. This is directly related to shifting project responsibility from one person/group to another and the effect of passing time on decision implementation. People leave units regularly and become unavailable for direct communication with new project managers.

Concern 9. Many decisions are not responsive to a specific situation.

Standard. Broad decisions should be validated by the specific application. (Is that decision practical in terms of the project time frame and impacted location)?

Discussion. This came from discussion about the need to continually validate broad decision during application to specific, on-the-ground situations. This obviously requires a good feedback and action system to the organizational level that makes/made broad decisions.

Concern 10. Member participation on I.D. teams is not commensurate with the relative importance of their field of expertise to the project.

Standard. Interdisciplinary Team member participation should be determined by a line officer and be commensurate with the sensitivity of the issues associated with a project.

Discussion. There is a continuing need to improve prioritizing our activities because of reduced budgets and personnel. This is no less important in project planning. Not only is unprioritized activity an inefficient use of resources it sometimes results in biased decisions that produce unacceptable results.

Concern 11 ^{2/} Decisions are made without the benefit of analysis of past project evaluations.

Standard: Decisions are validated by post project evaluation. These evaluations should be considered in making new decisions.

Discussion: A project is not really complete until a post project evaluation is made and data stored for use in future activities (projects). These evaluations include corrective measures and implementation plans. Evaluation should deal with quality of performance, meeting of objectives and determining if the objectives were appropriate.

2/ Concern 11 was added as a result of this study.

Appendix B

LINE OFFICER INVOLVEMENT SCHEDULE

A. Schedule

1. Develop a letter of management intent which assigns feasibility analysis responsibilities for possible timber sale developments within a logical planning area.

Participation Point: When individual or staff group analysis responsibilities are identified.

2. The line officer must understand critical issues and sensitivities unique to the proposed project within a planning area from the position statement and field validation as needed to:

- a. Identify and prioritize social, economical and environmental issues, concerns and opportunities.
- b. Assign interdisciplinary team members.
- c. Assign team charter (objectives).
- d. Assign the level of analysis expected of each team member.

Participation Point: When project evaluation criteria are formed.

3. Track the analysis process and make those priority adjustments warranted by new information.

Participation point: (1) When the accuracy of data or other input is determined. (2) When interdisciplinary meetings are expected to result in key interim decisions.

4. Identify the project plan which best resolves key issues and sensitivities while optimizing project outputs.

Participation Point: At the time project direction is provided with selection of a preferred alternative (sale plan).

5. Monitor implementation of the project plan. This would include a minimum of one on site plan-in-hand inspection per year.

Participation Point: When plan-in-hand field reviews are conducted.

B. Documents for Approval

1. Position Statement (FSM 2431.21)
2. Sale Plan - FONSI Decision (FSM 2404.13, FSM 2431.22, FSM 1950.42)
3. Certification that the Sale Meets Quality Control Criteria (FSM 2431.23)
4. Sale Area Improvement Plan (FSM 2404.13, FSM 6512.3)
5. Timber Sale Contract (FSM 2404.13)

Appendix C

Timber Sale Decision Study Units, Sales and Employee's Participating

Corning R.D. - Haypatch Sale

Keith Crummer - District Ranger
Bob Ramirez - Sale Preparation
Julian Howell - Sale Administration

Weaverville R.D. - Four Sale

Fred Ritchie - District TMO
Jim Baxter - Sale Administration
Jeff Bryant - Logging Systems

McCloud R.D. - Intake Sale

Bill Branham - Sale Planning
Bill Mc Bain - Sale Administration
Jeff Bryant - Logging Systems

Minarets R.D. - Jack Sale

Ed Becker - District TMO
Mike Garcia - Sale Administration
Bruce Moyle - Forest TMO

Kings River R.D. - Bull Creek Sale

Bob Zwirtz - Planning & Silviculture
Jim Bore - Sale Administration
Charlie Hellon - Transportation Planner
Bruce Moyle - Forest TMO

Downeyville R.D. - Elbow Sale

Dennis Knapp - Transportation Planner
Phil Aune - Forest Silviculturist
John Roland - Sale Planning
Bob Willour - Sale Preparation

Goosenest R.D. - Lava Sale

Tom Farmer - District Ranger
John Bell - AFF, Developments
Orville Hands - Sale Administration
Mark Roy - Fuel Officer
Sid Grove - District Engineer
Fred Jo Krueger - Acting District Ranger - Oak Knoll R.D.
John Perkins - Contract Administration Forester, Goosenest R.D.
Kent O'Dell - Silviculture - C.I.A.
Carl Jahnke-Leland - Sales Prep. Forester
Ken Briggman - Forest TMO
Ron Koenig - District Ranger - Salmon River
Jim Carrier - Asst. Forest TMO

TIMBER SALE DECISION STANDARDS

1. Decisions should be made by individuals who have delegated authority and can be held directly accountable.
2. Decisions should be made in proper sequence: programatic to area-of-influence (compartment, watershed and so forth) to project-area to activity-unit to within-the-unit.
3. The relative importance of influencing factors (environmental, social, financial, organizational and so forth) should be recognized before decisions are made.
4. Decisions should be preceded by an analysis which includes consideration of all objectives.
5. Consequences of a decision should be considered before making the decision (severity, probability and so forth).
6. Decisions made should be carried out throughout the life of the project unless new information necessitates different results (new objectives/standards/criteria and so forth) as directed by line officers.
7. Every change likely to bring about different results should reflect consideration of influencing factors recognized in the original decision as well as new factors.
8. Decisions which are to be carried out by others should be made in writing, clearly describing the expected results and factors considered (opportunities and constraints) and be signed by a person with delegated authority.
9. Broad decisions should be validated by the specific application. (Is that decision practical in terms of the project time frame and impacted location)?
10. Interdisciplinary team member participation should be determined by a line officer and be commensurate with the sensitivity of the issues associated with a project.
11. Decisions are validated by post project evaluation. These evaluations should be considered in making new decisions.

U.S. Department of Agriculture
Timber Sale Decision Study
Pacific SW Region Report and Action
Plan SF Dec. 1984

DATE DUE	BORROWER'S NAME	ROOM NUMBER